

With respect to claim 3, line 6, the Examiner asserts that the term "rotary bend" is ambiguous. Applicants respectfully traverse this part of the rejection for the following reasons.

A fundamental principle contained in 35 USC § 112, 2nd paragraph, is that Applicants are their own lexicographers. They can define their invention in whatever terms they choose so long as the terms are not used in ways that are contrary to accepted meanings in the art. See MPEP § 2173.01. Further, some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the Examiner might desire. See MPEP § 2173.02. Moreover, definiteness of claim language must be analyzed, not in a vacuum, but in light of (1) the content of the particular application disclosure, (2) the teachings of the prior art, and (3) the claim interpretation that would be given by one possessing an ordinary level of skill in the pertinent art at the time the invention was made. See MPEP § 2173.02.

The term "rotary bend" has been used consistently throughout the specification to refer to element (3) as shown in the Figures. Further, the term "rotary bend" is not used in a manner contrary to any accepted meaning in the prior art. Therefore, as Applicants may be their own lexicographers, the term "rotary bend" is not indefinite.

With respect to claim 10, the Examiner asserts that the terms "energizing" and "energizes" are not appropriate in a mechanical structure. Applicants respectfully traverse this part of the rejection because the term "energizing means" is used to define a spring, or an equivalent thereof. As is known in the art, springs store energy proportional to their displacement from an starting length. A spring then delivers energy as it returns to its starting length. Therefore, the use of "energizing" means is not indefinite.

With respect to the rest of the grounds of the rejection that are made by the Examiner in item number 1, on page 2 of the Office Action, Applicants have amended claims 1-3, 5, and 7-11, in a manner believed to overcome this rejection. Also, claims 12 and 13 have been amended to make them consistent with the changes to claim 11.

Claim Rejections - 35 U.S.C. § 102

The Examiner rejects claims 2, 3, 7, and 11 under 35 U.S.C. § 102(e) as being anticipated by US Patent 5,836,047 to Lee et al. (hereinafter Lee '047). Applicants respectfully traverse this rejection because Lee '047 fails to anticipate Applicants' claims in that the reference does not disclose all of Applicants' claimed elements.

Claim 2 sets forth an electric vacuum cleaner which includes, *inter alia*, a vacuum cleaner body, a hose to be connected to the vacuum cleaner body, a support pipe to be connected to the hose, and a rotary pipe to be connected to the support pipe in a rotatable manner, wherein the vacuum cleaner body is arranged such that the vacuum cleaner body can be fastened to the support pipe in a detachable manner, and such that it also can be fastened to the rotary pipe in a detachable manner, wherein the electric vacuum cleaner is provided with a rotation locking means for preventing rotation of the rotary pipe with respect to the support pipe.

Claim 3 sets forth a vacuum cleaner which includes, *inter alia*, a vacuum cleaner body, a support pipe connected to a suction inlet of the vacuum cleaner body, a rotary bend connected to the support pipe, and a rotary pipe connected to the rotary bend, wherein the vacuum cleaner body is attached to the support pipe, as well as to the rotary pipe, in an attachable/detachable manner.

Thus, in the invention of claims 2 and 3, the vacuum cleaner body (1) is attachable to, and detachable from, both the support pipe (2) and the rotary pipe (4). Because the body (1) is attachable to both the support pipe (2) and the rotary pipe (4), rotation between the rotary pipe (4) and the support pipe (2) is easily prevented by lock (14) in the same step as that in which the body (1) is attached to the support pipe.¹ The lock (14) includes a flat portion (11) on body (1) which engages flat portion (13) on the rotary pipe (4). Further, the flat portion (11) engages flat portion (12) on the rotary bend (3), wherein rotary bend (3) cannot rotate with respect to the support pipe (12). Therefore, when the vacuum body (1) is attached to the support pipe (2), the lock (14) prevents rotation between the support pipe (2) and the rotary pipe (4). Preventing rotation between the support pipe (2) and rotary pipe (4) is important in reducing the stress on a user's hand when the electric vacuum cleaner is used in its upright configuration.² However, when the body (1) is detached so as to put the electric vacuum cleaner in a canister configuration, it is important that the rotary pipe (4) be allowed to rotate with respect to the support pipe (2) so that the suction device attached thereto can be inserted into narrow spaces, such as under a bed.³ Thus, the claimed invention provides a simple manner for preventing rotation of the support pipe (2) with respect to the rotary pipe (4) when the vacuum cleaner is used in an upright configuration, and for allowing rotation of the support pipe (2) with respect to the rotary pipe (4) when the vacuum cleaner is used in a canister configuration.

¹ See page 7, lines 9-30, of the specification.

² See: page 2, line 25 - page 3, line 2; and page 3, line 38 - page 4, line 5, of the specification.

³ See: page 3, lines 3-12; and page 4, lines 5-8, of the specification.

In contrast to the invention defined in claims 2 and 3, Lee '047 discloses a vacuum cleaner body (300) which is attachable to, and detachable from, only a support pipe (350a, b). The vacuum cleaner body (300) is not detachable from the first connector section (360a) and, therefore, is not detachable from hose (316) which the Examiner calls a rotary pipe. As shown in Figure 2B, first hose (316f) is fixedly attached to the first connector section (360a) by screws (316m). Further, the first connector section includes protrusions (330a, b) which are held within slots (341a, b) on fitting portions (340a, b) of the vacuum cleaner body (300). When the vacuum cleaner is used in the upright configuration, as shown in Figures 3-6, the protrusions (330a, b) are held within the slots (341a, b). As shown in Figure 7, the connector section (360a) is still attached to the vacuum cleaner body (300) when the vacuum cleaner is in its canister configuration. Therefore, Lee does not disclose a vacuum cleaner body which is attachable to, and detachable from, both a support pipe and a rotary pipe, as set forth in Applicants' claims 2 and 3.

Claim 7 sets forth an electric vacuum cleaner which includes, *inter alia*, a vacuum cleaner body, a hose to be connected to the body, a support pipe to be connected to the hose, the support pipe having a first end and a second end opposite the first end, wherein the support pipe second end is connected to a rotary pipe which is provided with a first engaging portion that detachably engages with a first receiving portion formed on the rear portion of the vacuum cleaner body, and the support pipe is further provided with a second engaging portion which detachably engages with a second receiving portion formed in the front portion of the vacuum cleaner body.

Thus, one end of the vacuum cleaner body (1) includes a receiving portion (1c) which is detachably engaged with a first engaging portion (4d) on rotary pipe (4), and an opposite end of the vacuum cleaner body (1) includes a receiving portion (1d) which is detachably engaged with a second engaging portion (10) on support pipe (2). Because the vacuum cleaner body (1) is detachably engaged at opposite ends thereof, it is more stable when being attached to, and detached from, the support pipe and rotary bend. That is, because the first engaging portion may be engaged with the first receiving portion, and then the second engaging portion may be engaged with the second receiving portion—while being supported by the first engaging portion—the vacuum cleaner is more easily placed in its upright configuration. The present vacuum cleaner also includes similar advantages when detaching the vacuum cleaner body so as to be used in the canister configuration. That is, the second receiving portion of the vacuum cleaner body may be detached from the second engaging portion, while the vacuum cleaner body is still supported by the first engaging portion. Then, the first receiving portion of the vacuum cleaner body may be detached from the first engaging portion thereby facilitating detachment of the vacuum cleaner body.⁴

In contrast to the invention defined in claim 7, the vacuum cleaner body of Lee '047 is fixedly attached to both the first connector section (360a) and to the second connector section (360b). As noted above, the first connector section (360a) includes protrusions (330a, b) which are permanently received in the vacuum cleaner body's fitting portions (340a, b). Further, Lee '047 describes the second connector (360b) as "fixedly inserted in the second rear recess

⁴ See: page 4, lines 13-16, page 7, lines 31- page 8, line 18; page 12, lines 16-34; page 13, lines 11-35; and page 14, lines 20-31.

312b” of the vacuum cleaner body (300).⁵ Further, the second connector section is fixedly inserted in the second recess in both the upright and canister modes⁶; i.e., it is not detachable. Thus, although the suction pipe section (350) is “detachably connected to the second connector section 360b”⁷, the vacuum cleaner body (300) is not detachable from the second connector section (360b), or from the first connector section (360a). Therefore, Lee does not disclose a vacuum cleaner body which includes a first receiving portion formed in a rear portion thereof, and a second receiving portion formed in the front portion thereof, such that first and second engaging portions—respectively formed on a rotary pipe and a support pipe—detachably engage with the receiving portions on the vacuum cleaner body, as recited in claim 7.

Claim 11 sets forth an electric vacuum cleaner which includes, *inter alia*, a vacuum cleaner body, a hose to be connected to the vacuum cleaner body, a support pipe to be connected to the hose, the support pipe having a first side and a second side opposite the first side, and a suction device to be connected to the support pipe, wherein the vacuum cleaner body is detachably fastened to the first side of the support pipe, and wherein the hose is connected to the vacuum cleaner body such that the hose does not extend to the second side of the support pipe.

As defined in claim 11, a vacuum cleaner body (1) is connected to a support pipe (2) on a first side thereof. Further, a hose (6) is connected to the vacuum cleaner body such that it does not extend to a side of the support pipe that is opposite to the side on which the vacuum cleaner body is connected. Thus, a user is allowed to operate the vacuum cleaner from the side of the

⁵ See: column 4, lines 12-13; column 5, lines 34-35; and column 6, lines 24-25.

⁶ See column 2, lines 44-47.

⁷ See column 4, lines 16-21.

support pipe that is opposite to the side on which the vacuum cleaner body is connected. And because the hose (6) does not extend to the side opposite that on which the vacuum cleaner body is connected, the hose (6) does not interfere with the user which thus facilitates operation of the vacuum.⁸

In contrast to the invention as defined in claim 11, Lee's vacuum cleaner includes a flexible hose (309) which extends to both sides of the suction pipe sections (350a, b). That is, the flexible hose (309) extends to the side of the suction pipe sections (350a, b) on which the vacuum cleaner body (300) is connected, as well as to the side of the suction pipe sections (350a, b) opposite to that on which the body (300) is connected. See, for example, Figures 2, and 3-6. In this regard, Lee is similar to the prior art shown in Figure 21 of the specification. Thus, because the hose extends to the side of the support pipe from which the user operates the vacuum, the hose contacts the user thereby making use of the vacuum more difficult.² Therefore, Lee does not disclose a vacuum cleaner body which is detachable fastened to a first side of a support pipe, and a hose which is connected to the vacuum cleaner body such that it does not extend to the side of the support pipe opposite to that on which the vacuum cleaner body is fastened, as claimed by Applicants.

Thus, claims 2, 3, 7, and 11 are not anticipated by—i.e., are not readable on—Lee '047.

⁸ See: page 4, lines 17-20; page 8, line 33 - page 9, line 5; and page 20, line 29 - page 17, line 14, of the specification.

² See figure 21 of the present specification, as well as page 3, lines 25-31.

Claim Rejections - 35 U.S.C. § 103

The Examiner rejects claim 1 under 35 U.S.C. § 103(a) as being unpatentable over either Lee '047 or US Patent 4,393,536 to Tapp. Applicants respectfully traverse this rejection because the references fail to establish *prima facie* obviousness.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.¹⁰ Further, all words in a claim must be considered in judging the patentability of that claim against the prior art.¹¹

Claim 1 sets forth an electric vacuum cleaner which includes, *inter alia*, a vacuum cleaner body, a hose to be connected to the vacuum cleaner body, a support pipe to be connected to the hose, and a suction device to be connected to the support pipe, wherein the suction device is provided with running wheels, and the vacuum cleaner body is detachably fastened to the support pipe so that the vacuum cleaner body is supported by the wheels of the suction device when the vacuum cleaner body is attached to the support pipe.

According to claim 1, a suction device (3) includes running wheels (W) and is to be connected to a support pipe (2). Also, a vacuum cleaner body (1) is detachably fastened to the support pipe (2) such that the vacuum cleaner body (1) is supported by the wheels (W) of the suction device (3). By supporting the vacuum cleaner body (1) with the wheels (W) of the suction device (3), the present invention eliminates the need for wheels on the vacuum cleaner body (1). When a vacuum cleaner body includes wheels which contact the ground at the same time that a suction device's wheels contact the ground, the vacuum cleaner is hard to maneuver

¹⁰ *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

¹¹ *In re Wilson*, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970).

in different directions.¹² Thus, because the vacuum cleaner body is supported with the wheels of the suction device, fewer wheels contact the ground simultaneously, thereby making the vacuum cleaner easier to maneuver.¹³

In contrast to claim 1, Lee's vacuum cleaner includes a body (300) having wheels (321) which contact the ground simultaneously with the wheels (not labeled, but see Figure 2A) of the brush section (306). That is, Lee's vacuum cleaner body (300) is supported by its own wheels (321). Further, as shown in Figure 3, the wheels of the brush section (306) do not support the vacuum cleaner body (300). Therefore, Lee '047 does not teach or suggest a suction device having wheels, and a vacuum cleaner body which is supported by the wheels of the suction device, as claimed by Applicants.

Also in contrast to claim 1, Tapp discloses a vacuum cleaner which includes a canister (10) that is supported by its own wheels (20). Although Tapp discloses a floor-cleaning device (17) having wheels (34), it is the wheels (20) which support the canister (10) in both the vacuum cleaner's upright and canister configurations. See, for example, Figures 1 and 2. Further, Tapp describes the wheels (20) as "rest[ing] on the floor to facilitate movement of the [vacuum cleaner] unit" when it is in its upright configuration, and as "adapted to roll on the same plane as wheels 34 of floor-cleaning device 17".¹⁴ The wheels (34) of the floor-cleaning device (17) do not, then, support the canister when it is attached to the support pipe (15). Therefore, Tapp does

¹² See page 2, lines 13-24.

¹³ See page 7, lines 3-8; page 11, lines 8-16; and page 23, lines 15-22.

¹⁴ See column 2, lines 24-30, and column 3, lines 52-57.

not teach or suggest a suction device having wheels, and a vacuum cleaner body which is supported by the wheels of the suction device, as claimed by Applicants.

For at least the above reasons, then, the subject matter of claim 1 would not have been obvious from Lee '047 or Tapp, as applied by the Examiner.

Allowable Subject Matter

The Examiner indicates that claims 4-6, 8-10, 12, and 13 would be allowable if rewritten to overcome the rejection thereof under 35 U.S.C. § 112, 2nd paragraph. Accordingly, because the rejection of these claims under § 112 has been overcome, they are now allowable.

Conclusion

Claims 14-19 have been added to further define the invention. Claim 14 depends from claim 1, claim 15 depends from claim 3, claims 16-17 depend from claim 7, and claims 18-19 depend from claim 11. Therefore, claims 14-19 should be allowable for at least the same reasons as set forth with respect to claims 1, 3, 7, and 11.

In view of the above, reconsideration and allowance of this application—including all the claims, 1-19—are now believed to be in order, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/100,754

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jeffrey A. Schmidt". The signature is fluid and cursive, with the first name "Jeffrey" being more prominent and the last name "Schmidt" following in a similar style.

Jeffrey A. Schmidt
Registration No. 41,574

SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Date: October 14, 1999